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(54) Title: OPTICAL LENS PROVIDING OMNI-DIRECTIONAL COVERAGE AND ILLUMINATION

(57) Abstract: The invention presents a wide-angle imaging assembly which comprises a main lens produced from an aspheric optical block. The aspheric optical block comprises a vertical axis of symmetry; a transparent upper surface, at least part of which is capable of reflecting rays that impinge upon it from the interior of the optical block; a transparent perimeter surface; and a transparent lower surface. The optical block is fabricated from material selected to enable optical transmittance of a specific spectral range. Light rays in the specific spectral range originating in a first scene, having a 360 degrees panoramic perimeter, are refracted by the transparent perimeter surface, enter the optical block, are then reflected by the upper surface towards the transparent lower surface, where they are then refracted by the transparent lower surface, and exit through it.

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